

MAR 20 2009

Application No. 10/577,561
Response to Notice of Non-Compliant Amendment dated March 20, 2009
Reply to Office Action of September 5, 2008

Docket No.: 66540(46590)

AMENDMENTS TO THE CLAIMS

1. (Cancelled)
2. (Cancelled)
3. (withdrawn) The compound of claim 1, wherein the acyl group for X is a carboxyl group.
4. (Cancelled)
5. (Cancelled)
6. (Withdrawn) The compound of claim 1, wherein R⁴ is an amino group..
7. (Withdrawn) The compound of claim 1, wherein L is a C₁₋₁₀ alkylene group.
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Withdrawn) A prodrug of a compound of claim 1 or a salt thereof.
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)
17. (Cancelled)
18. (Cancelled)

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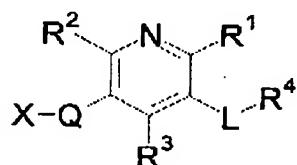
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19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (New) A compound represented by the formula



wherein

 R^1 and R^2 are the same or different and each is

- (1) a C₁₋₁₀ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a C₃₋₁₀ cycloalkyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkoxy group;
- (2) a C₆₋₁₄ aryl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or
- (3) a C₇₋₁₃ aralkyl group;

R^3 is a C₆₋₁₄ aryl group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s), a halogen atom, a C₁₋₆ alkoxy-carbonyl group, a carboxyl group, a hydroxy group, and a C₁₋₆ alkoxy group optionally substituted by 1 to 3 halogen atom(s);

 R^4 is an amino group; L is a C₁₋₁₀ alkylene group; Q is a bond, a C₁₋₁₀ alkylene group or a C₂₋₁₀ alkenylene group; and X is

- (2) a cyano group;
- (3)
 - (3a) a carboxyl group;
 - (3b) a carbamoyl group;
 - (3c) a C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3

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substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl-carbonyloxy group;

(3d) an aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3e) a non-aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group;

(3f) a C₇₋₁₃ aralkyloxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group, a halogen atom, a cyano group, a nitro group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(3g) a carbamoyl group mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom and a C₁₋₆ alkoxy group;

(3h) a carbamoyl-C₁₋₆ alkyl-carbamoyl group optionally mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s);

(3i) a C₁₋₆ alkoxy-carbonyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3j) a mono- or di-C₃₋₁₀ cycloalkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3k) a C₇₋₁₃ aralkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a hydroxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl group;

(3l) an aromatic heterocycl-C₁₋₆ alkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3m) a C₁₋₆ alkylsulfonyl group optionally substituted by 1 to 3

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substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3n) a C₆₋₁₄ arylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkylsulfonyl group;

(3o) a nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(3p) a C₆₋₁₄ aryl-nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3q) a C₇₋₁₃ aralkyl-nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3r) a non-aromatic heterocyclyloxy-carbonyl group;

(3s) a phosphono group optionally mono- or di-substituted by a C₁₋₆ alkyl group;

(3t) an aromatic heterocycl-C₇₋₁₃ aralkyloxy-carbonyl group;

(3u) a C₃₋₁₀ cycloalkyl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(3v) a C₆₋₁₄ aryl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from an amino group optionally mono- or di-substituted by a C₁₋₆ alkyl group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group; or

(3w) an aromatic heterocycl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4) (4a) a C₁₋₆ alkyl-carbonyloxy group;

(4b) a C₁₋₁₀ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

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(4c) a C₆-14 aryloxy group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁-6 alkoxy-carbonyl group, a C₁-6 alkylthio group, a carbamoyl group, a C₁-6 alkoxy group, a C₁-6 alkylsulfonyl group, a C₁-6 alkylsulfinyl group and a C₁-6 alkyl group (the C₁-6 alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group);

(4d) a 5- or 6-membered aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a C₁-6 alkyl group (the C₁-6 alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group;

(4e) a fused aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group;

(4f) an aromatic heterocycl-C₁-6 alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group; or

(4g) an aromatic heterocycl-C₆-14 aryloxy group;

(5) (5a) a C₁-6 alkylthio group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁-6 alkoxy-carbonyl group;

(5b) a C₆-14 arylthio group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group, a C₁-6 alkylthio group and a carbamoyl group; or

(5c) a 5- or 6-membered aromatic heterocyclthio group optionally substituted by 1 to 3 substituent(s) selected from a C₁-6 alkyl group, a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group;

(6) (6a) an amino group;

(6b) a C₁-6 alkoxy-carbonyl-C₁-10 alkylamino group;

(6c) a carboxy-C₁-10 alkylamino group;

(6d) a C₇-13 aralkyloxy-carbonylamino group optionally substituted

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by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6e) a carbamoylamino group;

(6f) a mono- or di-C₁₋₆ alkyl-carbamoylamino group;

(6g) a C₁₋₆ alkylsulfonylamino group;

(6h) a C₆₋₁₄ arylsulfonylamino group optionally substituted by a C₁₋₆ alkylsulfonyl group;

(6i) an aromatic heterocycl-sulfonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group and a mono- or di-(C₁₋₆ alkyl-carbonyl)-amino group;

(6j) a mono- or di-(C₁₋₆ alkyl-carbonyl)-amino group;

(6k) a C₃₋₁₀ cycloalkyl-carbonylamino group;

(6l) a C₆₋₁₄ aryl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a cyano group, an optionally halogenated C₁₋₆ alkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group;

(6m) a C₇₋₁₃ aralkyl-carbonylamino group;

(6n) a C₈₋₁₃ arylalkenyl-carbonylamino group;

(6o) an aromatic heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a C₆₋₁₄ aryl group, a C₇₋₁₃ aralkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6p) a nitrogen-containing heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6q) a C₆₋₁₄ aryl-nitrogen-containing heterocycl-carbonylamino group;

(6r) a tetrahydropyranylcarbonylamino group;

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(6s) a 4-oxo-4,5,6,7-tetrahydro-1-benzofuranyl-carbonylamino group;

(6t) a C₁₋₆ alkoxy-carbonylamino group optionally substituted by a C₁₋₆ alkoxy-carbonyl group;

(6u) a C₆₋₁₄ aryloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6v) a C₇₋₁₃ aralkyl-carbamoylamino group; or

(6w) an aromatic heterocycll-carbamoylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(7) (7a) tetrazolyl;

(7b) oxoimidazolidinyl;

(7c) dioxoimidazolidinyl optionally substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(7d) oxopiperazinyl;

(7e) dioxopiperazinyl;

(7f) oxodihydrooxadiazolyl;

(7g) dioxoisooindolyl;

(7h) oxazolyl optionally substituted by a C₁₋₆ alkoxy-carbonyl group;

(7i) dioxooxazolidinyl or dioxothiazolidinyl, each of which is optionally substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(7j) 4-oxo-2-thioxo-1,3-thiazolidin-5-yl or 4-oxo-2-thioxo-1,3-oxazolidin-5-yl, each of which is optionally substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(7k) 1,3(2H,5H)-dioxo-tetrahydroimidazo[1,5-a]pyridinyl;

(7l) 1,3(2H,5H)-dioxo-10,10a-dihydroimidazo[1,5-b]isoquinolinyl; or

(7m) a C₆₋₁₄ aryl group optionally substituted by a C₁₋₆ alkoxy-

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carbonyl group;

provided that

when X is an ethoxycarbonyl group, then Q is a C₁₋₁₀ alkylene group or a C₂₋₁₀ alkenylene group
or a salt thereof.

23. (New) The compound of claim 22, wherein X is

(2) a cyano group;

(3) (3a) a carboxyl group;

(3b) a carbamoyl group;

(3c) a C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl-carbonyloxy group;

(3d) an aromatic heterocyclil-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3e) a non-aromatic heterocyclil-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group;

(3f) a C₇₋₁₃ aralkyloxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group, a halogen atom, a cyano group, a nitro group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(3g) a carbamoyl group mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom and a C₁₋₆ alkoxy group;

(3h) a carbamoyl-C₁₋₆ alkyl-carbamoyl group optionally mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s);

(3i) a C₁₋₆ alkoxy-carbonyl-C₁₋₆ alkyl-carbamoyl group optionally

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substituted by a C₁₋₆ alkyl group;

(3j) a mono- or di-C₃₋₁₀ cycloalkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3k) a C₇₋₁₃ aralkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a hydroxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl group;

(3l) an aromatic heterocyclyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3m) a C₁₋₆ alkylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3n) a C₆₋₁₄ arylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkylsulfonyl group;

(3o) a nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(3p) a C₆₋₁₄ aryl-nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3q) a C₇₋₁₃ aralkyl-nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3r) a non-aromatic heterocycloloxy-carbonyl group;

(3s) a phosphono group optionally mono- or di-substituted by a C₁₋₆ alkyl group;

(3t) an aromatic heterocyclyl-C₇₋₁₃ aralkyloxy-carbonyl group;

(3u) a C₃₋₁₀ cycloalkyl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(3v) a C₆₋₁₄ aryl-carbamoyl group optionally substituted by 1 to 3

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substituent(s) selected from an amino group optionally mono- or di-substituted by a C₁₋₆ alkyl group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group; or

(3w) an aromatic heterocycl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4) (4a) a C₁₋₆ alkyl-carbonyloxy group;

(4b) a C₁₋₁₀ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(4c) a C₆₋₁₄ aryloxy group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group, a carbamoyl group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group, a C₁₋₆ alkylsulfinyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(4d) a 5- or 6-membered aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4e) a fused aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4f) an aromatic heterocycl-C₁₋₆ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(4g) an aromatic heterocycl-C₆₋₁₄ aryloxy group;

(5) (5a) a C₁₋₆ alkylthio group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

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(5b) a C₆-14 arylthio group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group, a C₁-6 alkylthio group and a carbamoyl group; or

(5c) a 5- or 6-membered aromatic heterocyclithio group optionally substituted by 1 to 3 substituent(s) selected from a C₁-6 alkyl group, a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group; or

(7) (7a) tetrazolyl;

(7b) oxoimidazolidinyl;

(7c) dioxoimidazolidinyl optionally substituted by a C₁-6 alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁-6 alkoxy-carbonyl group;

(7d) oxopiperazinyl;

(7e) dioxopiperazinyl;

(7f) oxodihydrooxadiazolyl;

(7g) dioxoisooindolyl;

(7h) oxazolyl optionally substituted by a C₁-6 alkoxy-carbonyl group;

(7i) dioxooxazolidinyl or dioxothiazolidinyl, each of which is optionally substituted by a C₁-6 alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁-6 alkoxy-carbonyl group;

(7j) 4-oxo-2-thioxo-1,3-thiazolidin-5-yl or 4-oxo-2-thioxo-1,3-oxazolidin-5-yl, each of which is optionally substituted by a C₁-6 alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁-6 alkoxy-carbonyl group;

(7k) 1,3(2H,5H)-dioxo-tetrahydroimidazo[1,5-a]pyridinyl;

(7l) 1,3(2H,5H)-dioxo-10,10a-dihydroimidazo[1,5-b]isoquinolinyl; or

(7m) a C₆-14 aryl group optionally substituted by a C₁-6 alkoxy-carbonyl group.

24. (New) The compound of claim 22, wherein R¹ and R² are the same or different and each is a C₁-10 alkyl group optionally substituted by 1 to 3 substituent(s) selected from a C₃-10 cycloalkyl group, a C₁-6 alkoxy-carbonyl group and a C₁-6 alkoxy group.

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25. (New) The compound of claim 22, wherein R3 is a C6-14 aryl group optionally substituted by 1 to 3 substituent(s) selected from a C1-6 alkyl group optionally substituted by 1 to 3 halogen atom(s) and a halogen atom.

26. (New) The compound of claim 22, wherein Q is a bond.

27. (New) The compound of claim 1, wherein X is

(3) (3a) a carboxyl group;

(3b) a carbamoyl group;

(3c) a C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl-carbonyloxy group;

(3d) an aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3e) a non-aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group;

(3f) a C₇₋₁₃ aralkyloxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group, a halogen atom, a cyano group, a nitro group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(3g) a carbamoyl group mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom and a C₁₋₆ alkoxy group;

(3h) a carbamoyl-C₁₋₆ alkyl-carbamoyl group optionally mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s);

(3i) a C₁₋₆ alkoxy-carbonyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

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(3j) a mono- or di-C₃-10 cycloalkyl-carbamoyl group optionally substituted by a C₁-6 alkyl group;

(3k) a C₇-13 aralkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a hydroxy group, a carboxyl group, a C₁-6 alkoxy-carbonyl group and a C₁-6 alkyl group;

(3l) an aromatic heterocycl-C₁-6 alkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁-6 alkoxy-carbonyl group;

(3m) a C₁-6 alkylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁-6 alkoxy-carbonyl group;

(3n) a C₆-14 arylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a C₁-6 alkyl group, a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁-6 alkoxy-carbonyl group and a C₁-6 alkylsulfonyl group;

(3o) a nitrogen-containing heterocycl-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group and a C₁-6 alkoxy-carbonyl group;

(3p) a C₆-14 aryl-nitrogen-containing heterocycl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3q) a C₇-13 aralkyl-nitrogen-containing heterocycl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3r) a non-aromatic heterocyclyoxy-carbonyl group;

(3s) a phosphono group optionally mono- or di-substituted by a C₁-6 alkyl group;

(3t) an aromatic heterocycl-C₇-13 aralkyloxy-carbonyl group;

(3u) a C₃-10 cycloalkyl-C₁-6 alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁-6 alkoxy-carbonyl group and a carbamoyl group;

(3v) a C₆-14 aryl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from an amino group optionally mono- or di-substituted by

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a C₁₋₆ alkyl group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group; or

(3w) an aromatic heterocycl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4) (4a) a C₁₋₆ alkyl-carbonyloxy group;

(4b) a C₁₋₁₀ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(4c) a C₆₋₁₄ aryloxy group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group, a carbamoyl group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group, a C₁₋₆ alkylsulfinyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(4d) a 5- or 6-membered aromatic heterocycloxy group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4e) a fused aromatic heterocycloxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4f) an aromatic heterocycl-C₁₋₆ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(4g) an aromatic heterocycl-C₆₋₁₄ aryloxy group;

(5) (5a) a C₁₋₆ alkylthio group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(5b) a C₆₋₁₄ arylthio group optionally substituted by 1 to 3

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substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group and a carbamoyl group; or

(5c) a 5- or 6-membered aromatic heterocyclithio group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(6) (6a) an amino group;

(6b) a C₁₋₆ alkoxy-carbonyl-C₁₋₁₀ alkylamino group;

(6c) a carboxy-C₁₋₁₀ alkylamino group;

(6d) a C₇₋₁₃ aralkyloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6e) a carbamoylamino group;

(6f) a mono- or di-C₁₋₆ alkyl-carbamoylamino group;

(6g) a C₁₋₆ alkylsulfonylamino group;

(6h) a C₆₋₁₄ arylsulfonylamino group optionally substituted by a C₁₋₆ alkylsulfonyl group;

(6i) an aromatic heterocycl-sulfonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group and a mono- or di-(C₁₋₆ alkyl-carbonyl)-amino group;

(6j) a mono- or di-(C₁₋₆ alkyl-carbonyl)-amino group;

(6k) a C₃₋₁₀ cycloalkyl-carbonylamino group;

(6l) a C₆₋₁₄ aryl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a cyano group, an optionally halogenated C₁₋₆ alkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group;

(6m) a C₇₋₁₃ aralkyl-carbonylamino group;

(6n) a C₈₋₁₃ arylalkenyl-carbonylamino group;

(6o) an aromatic heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a C₆₋₁₄ aryl group, a C₇₋₁₃ aralkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-

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carbonyl group and a carbamoyl group;

(6p) a nitrogen-containing heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6q) a C₆₋₁₄ aryl-nitrogen-containing heterocycl-carbonylamino group;

(6r) a tetrahydropyranylcarbonylamino group;

(6s) a 4-oxo-4,5,6,7-tetrahydro-1-benzofuranyl-carbonylamino group;

(6t) a C₁₋₆ alkoxy-carbonylamino group optionally substituted by a C₁₋₆ alkoxy-carbonyl group;

(6u) a C₆₋₁₄ aryloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6v) a C₇₋₁₃ aralkyl-carbamoylamino group; or

(6w) an aromatic heterocycl-carbamoylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group.

28. (New) The compound of claim 22, wherein X is a carboxyl group.

29. (New) The compound of claim 22, which is 5-(aminomethyl)-2-methyl-4-(4-methylphenyl)-6-neopentylnicotinic acid;

5-(aminomethyl)-6-isobutyl-2-methyl-4-(4-methylphenyl)nicotinic acid;

methyl 3-[(5-(aminomethyl)-6-isobutyl-2-methyl-4-(4-methylphenyl)pyridin-3-yl)methoxy]-1-methyl-1H-pyrazole-4-carboxylate;

{[2-isobutyl-6-methyl-4-(4-methylphenyl)-5-(2-morpholin-4-yl-2-oxoethyl)pyridin-3-yl]methyl}amine;

methyl 3-({[5-(aminomethyl)-6-isobutyl-2-methyl-4-(4-methylphenyl)pyridin-3-yl]acetyl}amino)benzoate;

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N-[5-(aminomethyl)-6-isobutyl-2-methyl-4-(4-methylphenyl)pyridin-3-yl]isoxazole-4-carboxamide,
or a salt thereof.

30. (New) A pharmaceutical agent comprising a compound of claim 22 or a salt thereof.

31. (New) The pharmaceutical agent of claim 30, which is an agent for the prophylaxis or treatment of diabetes, diabetic complications, impaired glucose tolerance or obesity.

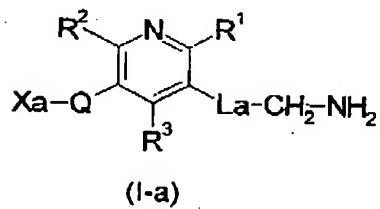
32. (New) A peptidase inhibitor comprising a compound of claim 22 or a salt thereof.

33. (New) The inhibitor of claim 32, wherein the peptidase is dipeptidyl peptidase-IV.

34. (New) A method for the prophylaxis or treatment of diabetes, diabetic complications, impaired glucose tolerance or obesity in a mammal, which comprises administering a compound of claim 22 or a salt thereof to the mammal.

35. (New) A method of inhibiting peptidase in a mammal, which comprises administering a compound of claim 22 or a salt thereof to the mammal.

36. (New) A production method of a compound represented by the formula



wherein

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R¹, R², R³ and Q are as defined in claim 22;
La is a bond or a C₁₋₉ alkylene group; and
Xa is

- (3) (3a) a carboxyl group;
- (3b) a carbamoyl group;
- (3c) a C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl-carbonyloxy group;
- (3d) an aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group and a C₁₋₆ alkoxy-carbonyl group;
- (3e) a non-aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group;
- (3f) a C₇₋₁₃ aralkyloxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group, a halogen atom, a cyano group, a nitro group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);
- (3g) a carbamoyl group mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom and a C₁₋₆ alkoxy group;
- (3h) a carbamoyl-C₁₋₆ alkyl-carbamoyl group optionally mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s);
- (3i) a C₁₋₆ alkoxy-carbonyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;
- (3j) a mono- or di-C₃₋₁₀ cycloalkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;
- (3k) a C₇₋₁₃ aralkyl-carbamoyl group optionally substituted by 1 to 3

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substituent(s) selected from a halogen atom, a hydroxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl group;

(3l) an aromatic heterocyclyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3m) a C₁₋₆ alkylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3n) a C₆₋₁₄ arylsulfonyl group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkylsulfonyl group;

(3o) a nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(3p) a C₆₋₁₄ aryl-nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3q) a C₇₋₁₃ aralkyl-nitrogen-containing heterocyclyl-carbonyl group optionally substituted by 1 to 3 halogen atom(s);

(3r) a non-aromatic heterocyclyloxy-carbonyl group;

(3s) a phosphono group optionally mono- or di-substituted by a C₁₋₆ alkyl group;

(3t) an aromatic heterocyclyl-C₇₋₁₃ aralkyloxy-carbonyl group;

(3u) a C₃₋₁₀ cycloalkyl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(3v) a C₆₋₁₄ aryl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from an amino group optionally mono- or di-substituted by a C₁₋₆ alkyl group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group; or

(3w) an aromatic heterocyclyl-carbamoyl group optionally

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substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4) (4a) a C₁₋₆ alkyl-carbonyloxy group;

(4b) a C₁₋₁₀ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(4c) a C₆₋₁₄ aryloxy group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group, a carbamoyl group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group, a C₁₋₆ alkylsulfinyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(4d) a 5- or 6-membered aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4e) a fused aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(4f) an aromatic heterocycl-C₁₋₆ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(4g) an aromatic heterocycl-C₆₋₁₄ aryloxy group;

(5) (5a) a C₁₋₆ alkylthio group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(5b) a C₆₋₁₄ arylthio group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group and a carbamoyl group; or

(5c) a 5- or 6-membered aromatic heterocyclthio group optionally

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substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6) (6a) an amino group;

(6b) a C₁₋₆ alkoxy-carbonyl-C₁₋₁₀ alkylamino group;(6c) a carboxy-C₁₋₁₀ alkylamino group;(6d) a C₇₋₁₃ aralkyloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6e) a carbamoylamino group;

(6f) a mono- or di-C₁₋₆ alkyl-carbamoylamino group;(6g) a C₁₋₆ alkylsulfonylamino group;(6h) a C₆₋₁₄ arylsulfonylamino group optionally substituted by a C₁₋₆ alkylsulfonyl group;(6i) an aromatic heterocycl-sulfonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group and a mono- or di-(C₁₋₆ alkyl-carbonyl)-amino group;(6j) a mono- or di-(C₁₋₆ alkyl-carbonyl)-amino group;(6k) a C₃₋₁₀ cycloalkyl-carbonylamino group;(6l) a C₆₋₁₄ aryl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a cyano group, an optionally halogenated C₁₋₆ alkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group;(6m) a C₇₋₁₃ aralkyl-carbonylamino group;(6n) a C₈₋₁₃ arylalkenyl-carbonylamino group;(6o) an aromatic heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a C₆₋₁₄ aryl group, a C₇₋₁₃ aralkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;(6p) a nitrogen-containing heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the

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C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6q) a C₆₋₁₄ aryl-nitrogen-containing heterocycl-l-carbonylamino group;

(6r) a tetrahydropyranylcarbonylamino group;

(6s) a 4-oxo-4,5,6,7-tetrahydro-1-benzofuranyl-carbonylamino group;

(6t) a C₁₋₆ alkoxy-carbonylamino group optionally substituted by a C₁₋₆ alkoxy-carbonyl group;

(6u) a C₆₋₁₄ aryloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6v) a C₇₋₁₃ aralkyl-carbamoylamino group; or

(6w) an aromatic heterocycl-l-carbamoylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(7) (7a) tetrazolyl;

(7b) oxoimidazolidinyl;

(7c) dioxoimidazolidinyl optionally substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(7d) oxopiperazinyl;

(7e) dioxopiperazinyl;

(7f) oxodihydrooxadiazolyl;

(7g) dioxoisooindolyl;

(7h) oxazolyl optionally substituted by a C₁₋₆ alkoxy-carbonyl group;

(7i) dioxooxazolidinyl or dioxothiazolidinyl, each of which is optionally substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(7j) 4-oxo-2-thioxo-1,3-thiazolidin-5-yl or 4-oxo-2-thioxo-1,3-

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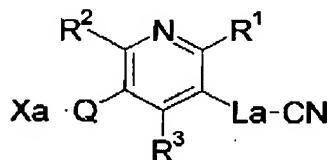
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oxazolidin-5-yl, each of which is optionally substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group and a C₁₋₆ alkoxy-carbonyl group;

(7k) 1,3(2H,5H)-dioxo-tetrahydroimidazo[1,5-a]pyridinyl;
 (7l) 1,3(2H,5H)-dioxo-10,10a-dihydroimidazo[1,5-b]isoquinolinyl; or
 (7m) a C₆₋₁₄ aryl group optionally substituted by a C₁₋₆ alkoxy-carbonyl group;
 or a salt thereof, which comprises subjecting a compound represented by the formula



(II)

wherein each symbol is as defined above, or a salt thereof to a reduction reaction.

37. (New) The compound of claim 22, wherein R³ is a phenyl group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s) and a halogen atom.

38. (New) The compound of claim 22, wherein X is

- (3) (3a) a carboxyl group;
- (3b) a carbamoyl group;

(3c) a C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl-carbonyloxy group;

(3d) an aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

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(3e) a non-aromatic heterocycl-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group;

(3g) a carbamoyl group mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom and a C₁₋₆ alkoxy group;

(3h) a carbamoyl-C₁₋₆ alkyl-carbamoyl group optionally mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s);

(3i) a C₁₋₆ alkoxy-carbonyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3j) a mono- or di-C₃₋₁₀ cycloalkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3k) a C₇₋₁₃ aralkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a hydroxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl group;

(3l) an aromatic heterocycl-C₁₋₆ alkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3r) a non-aromatic heterocyclyoxy-carbonyl group;

(4) (4b) a C₁₋₁₀ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(4c) a C₆₋₁₄ aryloxy group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group, a carbamoyl group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group, a C₁₋₆ alkylsulfinyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group);

(4d) a 5- or 6-membered aromatic heterocyclyoxy group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a

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C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6) (6d) a C₇₋₁₃ aralkyloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6l) a C₆₋₁₄ aryl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a cyano group, an optionally halogenated C₁₋₆ alkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group;

(6o) an aromatic heterocycl-l-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a C₆₋₁₄ aryl group, a C₇₋₁₃ aralkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(6p) a nitrogen-containing heterocycl-l-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group.

39. (New) The compound of claim 22, wherein X is

(3) (3a) a carboxyl group;

(3b) a carbamoyl group;

(3c) a C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl-carbonyloxy group;

(3d) an aromatic heterocycl-l-C₁₋₆ alkoxy-carbonyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group, a thiocarbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(3e) a non-aromatic heterocycl-l-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group;

(3g) a carbamoyl group mono- or di-substituted by a C₁₋₆ alkyl

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group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom and a C₁₋₆ alkoxy group;

(3h) a carbamoyl-C₁₋₆ alkyl-carbamoyl group optionally mono- or di-substituted by a C₁₋₆ alkyl group optionally substituted by 1 to 3 halogen atom(s);

(3i) a C₁₋₆ alkoxy-carbonyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3j) a mono- or di-C₃₋₁₀ cycloalkyl-carbamoyl group optionally substituted by a C₁₋₆ alkyl group;

(3k) a C₇₋₁₃ aralkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a hydroxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a C₁₋₆ alkyl group;

(3l) an aromatic heterocyclyl-C₁₋₆ alkyl-carbamoyl group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group; or

(3r) a non-aromatic heterocyclyloxy-carbonyl group.

40. (New) The compound of claim 22, wherein X is

(3) (3a) a carboxyl group;

(3e) a non-aromatic heterocyclyl-C₁₋₆ alkoxy-carbonyl group optionally substituted by a C₁₋₆ alkyl group; or

(3r) a non-aromatic heterocyclyloxy-carbonyl group.

41. (New) The compound of claim 22, wherein X is

(4) (4b) a C₁₋₁₀ alkoxy group optionally substituted by 1 to 3 substituent(s) selected from a hydroxy group, a carboxyl group, a carbamoyl group and a C₁₋₆ alkoxy-carbonyl group;

(4c) a C₆₋₁₄ aryloxy group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, a C₁₋₆ alkylthio group, a carbamoyl group, a C₁₋₆ alkoxy group, a C₁₋₆ alkylsulfonyl group, a C₁₋₆ alkylsulfinyl group and a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group); or

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(4d) a 5- or 6-membered aromatic heterocyclyloxy group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group (the C₁₋₆ alkyl group is optionally substituted by 1 or 2 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group.

42. (New) The compound of claim 22, wherein X is

(6) (6d) a C₇₋₁₃ aralkyloxy-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group;

(6l) a C₆₋₁₄ aryl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a halogen atom, a cyano group, an optionally halogenated C₁₋₆ alkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group, an aromatic heterocyclic group, a non-aromatic heterocyclic group and a carbamoyl group;

(6o) an aromatic heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a C₁₋₆ alkyl group, a C₆₋₁₄ aryl group, a C₇₋₁₃ aralkyl group, a C₁₋₆ alkoxy group, a carboxyl group, a C₁₋₆ alkoxy-carbonyl group and a carbamoyl group; or

(6p) a nitrogen-containing heterocycl-carbonylamino group optionally substituted by 1 to 3 substituent(s) selected from a c₁₋₆ alkyl group (the c₁₋₆ alkyl group is optionally substituted by 1 to 3 substituent(s) selected from a carboxyl group, a c₁₋₆ alkoxy-carbonyl group and a carbamoyl group), a carboxyl group, a c₁₋₆ alkoxy-carbonyl group and a carbamoyl group.

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